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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,864	01/31/2006	Masanori Kusunoki	2271/75819	2176
23432 7590 12/26/2007 COOPER & DUNHAM, LLP 1185 AVENUE OF THE AMERICAS NEW YORK, NY 10036			EXAMINER HSIEH, SHIH WEN	
			ART UNIT 2861	PAPER NUMBER
			MAIL DATE 12/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/566,864

Applicant(s)

KUSUNOKI ET AL.

Examiner

shih-wen hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Terminal Disclaimer

2. The terminal disclaimer filed on Oct. 9, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of co-pending application 10/555,456 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hara et al. (US Pat. No. 6,481,826).

In regard to:

Claim 1:

Hara et al. teach:

A maintenance/recovery device for a liquid discharge device, comprising:

a cap member (9, figs. 25 and 26) covering a surface of a nozzle of a liquid discharging head (12, fig. 2), the liquid discharging head discharging a droplet of a recording liquid from the nozzle, refer to col. 22, lines 26-38;

a resilient contact member (22, figs. 25 and 26) provided in the cap member to come in contact with the surface of the nozzle, refer to col. 22, lines 28-38;

a recess-forming member (21, figs. 25 and 26) providing in the cap member to form a recess (55, figs. 25 and 26) for receiving the recording liquid attracted from the nozzle, refer to col. 22, lines 39-44

wherein the contact member and the recess-forming member are integrally formed by molding, the recess-forming member is made of a water-repellent resin material containing a water repellent agent, and the recess forming member is provided to have at least two slopes being inclined toward an outlet (53, figs. 25 and 26) at a bottom of the recess, refer to col. 22, lines 39-44; and col. 23, lines 1-3.

Claim 6:

An image forming device comprising:

a liquid discharge head provided as a recording head which discharges a droplet of a recording liquid from a nozzle; and

a maintenance/recovery device provided to maintain and recover performance of the liquid discharge head,

the maintenance/recovery device comprising:

a cap member covering a surface of the nozzle of the liquid discharging head;

a resilient contact member provided in the cap member to come in contact with the surface of the nozzle;

a recess-forming member providing in the cap member to form a recess for receiving the recording liquid attracted from the nozzle,

wherein the contact member and the recess-forming member are integrally formed by molding, the recess-forming member is made of a water-repellent resin material containing a water repellent agent, and the recess-forming member is provided to have at least two slopes being inclined toward an outlet at a bottom of the recess.

Rejection:

Subject matters such as: recording head, nozzle, cap member, resilient contact member, recess forming member, water repellent material, etc. are the same as those in claim 1 and is rejected on the basis as set forth for claim 1 discussed above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 2-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al.

In regard to:

Claim 2:

The device of Hara et al. DIFFERS from claim 2 in that it does not teach:

wherein a content of the water repellent agent in the resin material which forms the recess-forming member does not exceed 10 weight percent.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a certain amount of water repellent agent in the resin material, since it has been held that discovering an optimum value of a result effective variable, such as 10% in weight as proposed by the present application, involves only routine skill in the art, refer to MPEP 2144.05 II B.

Claim 3:

The device of Hara et al. DIFFERS from claim 3 in that it does not teach:
wherein the recess of the recess-forming member is provided with corners which are curved.

Hara et al. teach in their fig. 8 a cap member (9) having the resilient contact member (22) and a recess forming member (21) same as those in their fig. 26. The recess formed in the recess forming member is indicate as numeral (23, fig. 7). A top view of fig. 7, i.e., fig. 8 shows corners of the recess (23) is round, which is curved.

Therefore, it would have been an obvious matter that the corners of the recess in Hara et al.'s fig. 26 can be in a round shape as that in their fig. 8.

Claim 4:

Hara et al. teach the inclination surface in the recess as surface (54, fig. 26). The angle this inclination surface made with a horizontal surface is less than 45 degrees as that angle can be visualized in fig. 26.

Hara et al. further teach the surface (54) has water repellent. Ink discharged from the recording head onto the surface (54) will bead up or in a ball like shape, refer to col. 23, lines 61-65. The contact angle of the ball like ink droplet with the surface (54) is greater than 90 degrees (refer to US 6,846,076, fig. 3; and US 6,435,665, fig. 1. Both references are attached to this office action for your reference).

The inclination angle and the contact angle are discussed as above. Their summation is obviously greater that 70 degrees.

However, the device of Hara et al. DIFFERS from claim 4 in that it does not tech:

wherein a sum of an inclination angle of the slopes of the recess-forming member to a horizontal surface and a contact angle between the slopes and the recording liquid is 70 degrees or more.

As discussed above, the summation of the two angles is obvious greater than 70 degrees or more.

Claim 5:

The maintenance/recovery device according to claim 4 wherein the sum of the inclination angle and the contact angle is 90 degrees or more.

Rejection:

This claim is rejected on the basis as set forth for claim 4 discussed above.

Claim 8:

The image forming device according to claim 6 wherein a content of the water repellent agent in the resin material which forms the recess-forming member does not exceed 10 weight percent.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above.

Claim 9:

The image forming device according to claim 6 wherein the recess of the recess-forming member is provided with corners which are curved.

Rejection:

This claim is rejected on the basis as set forth for claim 3 discussed above.

Claim 10:

The image forming device according to claim 6 wherein a sum of an inclination angle of the slopes of the recess-forming member to a horizontal surface and a contact angle between the slopes and the recording liquid is 70 degrees or more.

Rejection:

This claim is rejected on the basis as set forth for claim 4 discussed above.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. in view of Arita et al. (US Pat. No. 6,695,443).

The device of Hara et al. DIFFERS from claim 7 in that it does not teach:

wherein the recording liquid contains water, pigment, a polymer component and a water-soluble organic solvent, and wherein an amount of pigment is equal to or more than 6 weight percent of the recording liquid, and a viscosity of the recording liquid is equal to or higher than 5 cps and equal to or lower than 20 cps and a surface tension of the recording liquid is 40 dyne/cm at a temperature of 25°C.

Arita et al. teach an ink for an ink jet printer, and the composition of the ink is as shown in the Abstract.

Therefore, it would have been an obvious matter to use a specific composition of the ink such as taught by Arita et al. for the intended use, such as to realize an image quality of laser printer on a plain paper in a one pass printing mood under conditions of a volume of an ink droplet ejected being 5-43 pico liter, a velocity of the ink droplet being 6 to 20 m/sec, frequency of 1kHz and resolution of 300 dpi or more.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1, 4-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1, 2, 4-8, 10 and 11 of copending Application No. 10/555,456. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a capping device having a recess with inclination surface, which is water repellent, and the summation of the inclination angle with respect to a horizontal surface and the contact angle is 70 or 90 degrees or more. The composition of the recording liquid recited in claim 7 in both cases are identical.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

A comparison between claims in both case are not tabulated in this office action. However, the similarity between claims of both cases is discussed as above. Therefore, recitations of claims as mentioned above are obvious over those in the corresponding claims in the co-pending application.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

11. Applicant's arguments filed Oct. 9, 2007 have been fully considered but they are not persuasive:

Applicants argued in their REMARKS page 6 that: "The cited art fails to recognize the advantages that can be obtained when the recess-forming member in the maintenance/recovery device is made of a water-repellant resin material containing a water repellent agent".

To this issue, Examiner respectfully disagrees. Because:

Hara et al. teach in their col. 23, lines 1-3 and lines 61-67 that the slope (corresponding to the recess-forming member in the instant applicant) is water-repellent treated. Examiner contends surface treatment with water-repellent and the recess-forming member is made of water-repellent material containing a water-repellent agent are basically the same. Because only the surface of the recess-forming member or the slope (in Hara et al.) receives the discharged ink. Therefore, surface coated with water-repellent material is just sufficient to serve the purpose, or rest of the slope material do not have to be water-repellent. Beside, in the instant application, there is a possibility that the surface of the recess-forming member is not completely water-repellent, or not evenly water-repellent simply because of the water repellent agent being added to the recess-forming member is not evenly mixed into the material of the recess-forming member and may cause a water-repellent effect on the surface of the recess-forming member not as good as the water-repellent effect of Hara et al. sloped surface.

Applicants further argued in their REMARKS page 7 that: "However, Hera does not teach or suggest that the recess-forming member is made of a water-repellant resin

material containing a water repellent agent, as provided by the subject matter of claim 1 of the present application”.

For this part of the argument, Examiner's discussion above will answer the argument.

Applicants still further argued in their REMARKS page 7 that: “ While Hara proposes that the holder can be made of polypropylene. Hara fails to recognize that non-discharge nozzle can still be experienced when the recess-forming member in such a capping unit is made of a water-repellant resin material not containing a water repellent agent. The solution Hara proposes to the ink sticking problem is to apply post treatment to the holder to form a water repellent layer on a surface of the slopes”.

To this issue, Examiner respectfully disagrees. Because:

First, since a water-repellent coated surfaced in Hara et al's invention has the same effect as a resin material contains water repellent agent proposed by the instant application as discussed above. Then as a result of the discharging ink contacts only the surface of the recess-forming member, non-discharging nozzle will not experience in Hara et al.'s invention the same as that in the instant application. Because the internal portion of the recess-forming member (the portion of the recess-forming member underneath the surface of the recess-forming member) has nothing to do with the discharged ink.

Secondly, is the underlined portion above (water-repellant resin material) be “polypropylene”? So the argument will read: “Hara fails to recognize that non-discharge

nozzle can still be experienced when the recess-forming member in such a capping unit is made of a polypropylene not containing a water repellent agent. Please advise.

Thirdly, Applicants argued: "The solution Hara proposes to the ink sticking problem is to apply post treatment to the holder to form a water repellent layer on a surface of the slopes".

To this issued Examiner respectfully disagrees. Because:

Examiner believes "post treatment" such as adding a coating to an existing sloped surface disclosed by Hara et al. or using a resin containing water-repellent agent (that can be considered as a pre-treatment so as to contrary to the post treatment argued by the Applicants) proposed by the Applicants is irrelevant. Since the sole purpose of a water-repellent surface is to facilitate the flowing of ink to the bottom of the cap and to a reservoir through a drain hole such as the hole (53) in Hara et al.'s invention, and Examiner contends directly coating a water-repellent material on the surface has more efficient and effect than doing a mixing of the water-repellent agent with the resin.

Applicant still further argued in their REMARKS page 7 that: "Arita, as understood by Applicant, proposes an ink of a specified constitution for use in ink jet recording.

Applicant does not find teaching or suggestion in the cited art, however, of a maintenance/recovery device comprising a resilient contact member provided in a cap member to come in contact with the surface of the nozzle, and a recess-forming member providing in the cap member to form a recess for receiving the recording liquid

attracted from the nozzle, wherein the contact member and the recess-forming member are integrally formed by molding, the recess-forming member is made of a water-repellant resin material containing a water repellent agent, and the recess-forming member is provided to have at least two slopes being inclined toward an outlet at a bottom of the recess, as provided by the subject matter of claim 1 of the present application. Independent claim 6 is patentably distinct from the cited art for at least similar reasons".

To this issue, Examiner respectfully disagrees. Because:

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to shih-wen hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SWH


Dec. 16, 2007

SHIH-WEN HSIEH
PRIMARY EXAMINER

